

**SYSTEMS AND METHODS FOR DETERMINING
AN ACOUSTIC AND/OR THERMAL CHARACTERISTIC
OF A TARGET MATERIAL**

ABSTRACT

A system and method for determining an acoustic and/or thermal characteristic of a target material are provided. The system includes an acoustic source arranged to direct a sound wave at a target material; a device for measuring a sound pressure generated by at least the acoustic sensor, to obtain a sound pressure measurement; a density sensor arranged to measure a density of the target material to obtain a density measurement; and an analyzer arranged to receive the sound pressure measurement and the density measurement. The analyzer is capable of determining an acoustic and/or thermal characteristic of the target material based on the sound pressure measurement and/or the density measurement.